



Computational and Software Techniques in Engineering - Option in Computer Aided Engineering

MSc

Computer Aided Engineering (CAE) covers the use of computers in all activities from the design to the manufacture of a product. It is at the forefront of information technology and of crucial importance to economies around the world. It is a vital part of many global industries including those of automotive, aerospace, oil, defence, finance and health. This specialist option of the MSc Computational and Software Techniques in Engineering has been developed to reflect the wide application of CAE, and to deliver qualified engineers of the highest standard into industries operating in the fields of computational and software engineering. The specialist taught modules are designed to provide you with the knowledge, programming techniques and practical skills necessary to develop and use core CAE solution software over a wide range of industrial settings. This course is also available on a part-time basis, enabling you to combine studying alongside full-time employment. We are very well located for visiting part-time students from across the UK and Europe.

Course structure

The course consists of core modules which a group design project, plus an individual research project.

Individual project

The individual research project allows you to develop specialist skills by taking the theory from the taught modules and combining it with practical application. The research project gives you the opportunity to produce a detailed piece of work either in close collaboration with industry, or on a particular topic which you are passionate about.

Group project

This aims to provide you with invaluable experience of delivering a project within an industry structured team. The project allows you to develop a range of skills including learning how to establish team member roles and responsibilities, project management, delivering technical presentations, and working with members who have a variety of backgrounds and experience.

Future career

Students of this course attract interest from companies who wish to recruit high quality graduates. Typically our graduates are employed by software houses and consultancies, or by CAD/CAM and other engineering companies in software development roles and industrial research. In recent years, our graduates have been employed in roles such as; Design Manager (Hindustan Aeronautics); Financial Software Developer (Bloomberg); Research Engineer (Moodstocks SAS); Software Developer (CAE Engineering); Computer Science Engineer (Sopra Group); IT Architecture Consultant (Solucom); Asset Management Engineering (EON); Mathematical Software Engineer (Arithmetica); and Analyst (Morgan Stanley).

Example modules

Compulsory modules are delivered via a combination of lectures and tutorial sessions.

Compulsory:

- Advanced CAE Applications,
- Advanced Graphics,
- Advanced Engineering Analysis,
- C Programming (pre-requisite),
- C++ Programming,
- CAE Applications and PLM,
- Computational Engineering (Fluids),
- Computational Methods,
- Computer Graphics Occ B (ESTIA),
- Geometric Modelling and Design,
- Management for Technology.

Duration:

MSc: Full-time - one year, Part-time - up to three years.

Start date:

September.

Location:

Cranfield Campus.

Entry requirements:

Applicants are required to either have a minimum of a UK second class Honours degree or equivalent in applied mathematics, engineering, or computer science. We accept applications as part of a recognised double degree programme and those with lesser qualifications but with relevant work experience will be considered.

Applicants who do not fulfil the standard entry requirements can apply for the Pre-master's in Engineering programme, successful completion of which will qualify them for entry to this course for a second year of study.

ATAS Certificate

Students requiring a visa to study in the UK may need to apply for an ATAS certificate to study this course.

Contact details

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For further information please visit

www.cranfield.ac.uk/courses/taught/computer-aided-engineering